

Nathan Kraus
Permits Section – Hazardous Waste Program
Missouri Department of Natural Resources
1738 Elm Street, P.O. Box 176
Jefferson City, MO 65102

Charlene Fitch
U.S. Environmental Protection Agency
Region VII, RCRA Corrective Action
11201 Renner Boulevard
Lenexa, KS 66219

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ENVIRONMENT

Subject:
Corrective Action Cost Estimate
Former American Cyanamid Company Facility near Hannibal, Missouri
EPA ID Number MOD050226075

Date:
June 8, 2018

Contact:
John Shonfelt

Phone:
913.998.6911

Email:
john.shonfelt@arcadis.com

Our ref:
KC001580.2017

Dear Mr. Kraus and Ms. Fitch:

Pfizer conducts Corrective Action activities, including operating the groundwater extraction and treatment system (GWTS) and collecting groundwater samples at the former American Cyanamid Company Facility near Hannibal, Missouri. The facility is currently owned and operated by BASF Corporation (BASF). These Corrective Action activities are performed in accordance with Special Condition III.8 of BASF's EPA Hazardous and Solid Waste Amendments (HSWA) Permit, dated May 30, 1990

Arcadis U.S., Inc. (Arcadis), on behalf of Pfizer, is submitting this Corrective Action Cost Estimate as requested by the Missouri Department of Natural Resources (MDNR) in the Approval of Interim Measures letter dated November 13, 2017.

Estimated costs to complete the Corrective Action are contained in the attached Table 1 and show monitoring and operations and maintenance activities for a 30-year project duration. The extended cost for the Corrective Action program is further summarized in the table below:

RCRA 6/8/2018



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Corrective Action Cost Item	Annual Cost	Extended Cost for 30 Years
Annual Activities (groundwater sampling and reporting, groundwater treatment system O&M)	\$269,000 annually	\$8,070,000
Decommissioning Activities (well abandonment and system salvage)	\$80,000 at end of project	\$80,000
Estimated Corrective Action Cost for Project Life (undiscounted dollars):		\$8,150,000

These updated Corrective Action were developed with consideration of recent changes in the GWTS, including the new extraction wells and other system upgrades.

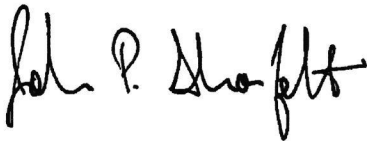
If you have any questions regarding the information provided in the SAP, please contact John Shonfelt of Arcadis at 913.998.6911.

Sincerely,

Arcadis U.S., Inc.



Bretton C. Overholtzer, P.E.
Principal Engineer



John P. Shonfelt, P.G.
Principal/Senior Project Manager

Copies:

Curt Gardner, BASF

Thomas Donohue, Wyeth

TABLE 1
Estimated Annual Operations and Maintenance Costs
Groundwater Sampling and GWTS Operation
BASF Corporation – Hannibal Plant

Annual Activities

○ Groundwater Sampling (includes one site-wide sampling event and three additional system performance sampling events)	\$75,000
○ Annual Groundwater Report (includes data validation and presentation, and draft and final reports)	\$25,000
○ Monitoring well network maintenance (includes replacement wells, as necessary)	\$5,000
○ Groundwater Treatment System O&M (includes power, system cleaning and maintenance, NPDES sampling and reporting, and system reports)	\$160,000
○ Equipment Upgrades and Replacement (may occur periodically, but annualized for costing purposes)	\$4,000

Estimated Total Annual O&M Cost	\$269,000
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Estimated Thirty Year O&M Cost (\$269,000 x 30 years)	\$8,070,000
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Decommissioning Activities (at end of 30-year life cycle)

○ Monitoring and recovery well abandonment	\$60,000
○ System decommissioning and salvage	\$20,000

Estimated Decommissioning Cost	\$80,000
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ESTIMATED FINANCIAL ASSURANCE COST	\$8,150,000
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